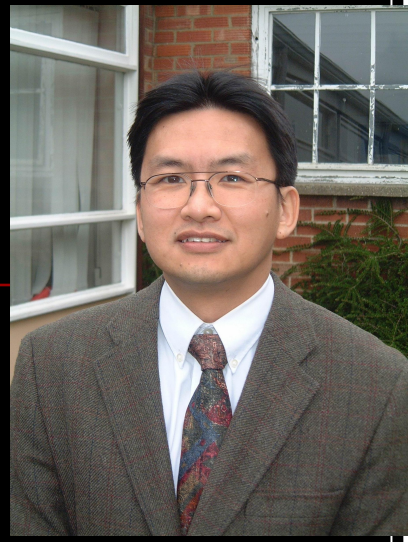
Lesley Bennett
Consultant Physician

Oxford Centre for Respiratory Medicine
Churchill Hospital

Respiratory Services

- 5 WTE Consultants
- Inpatient care of 20 beds on the respiratory unit including 2 high dependency beds
- Approx 11000 out-patients per year
- Treatment centre
  - 1200 day cases
  - Rapid assessment for urgent patients

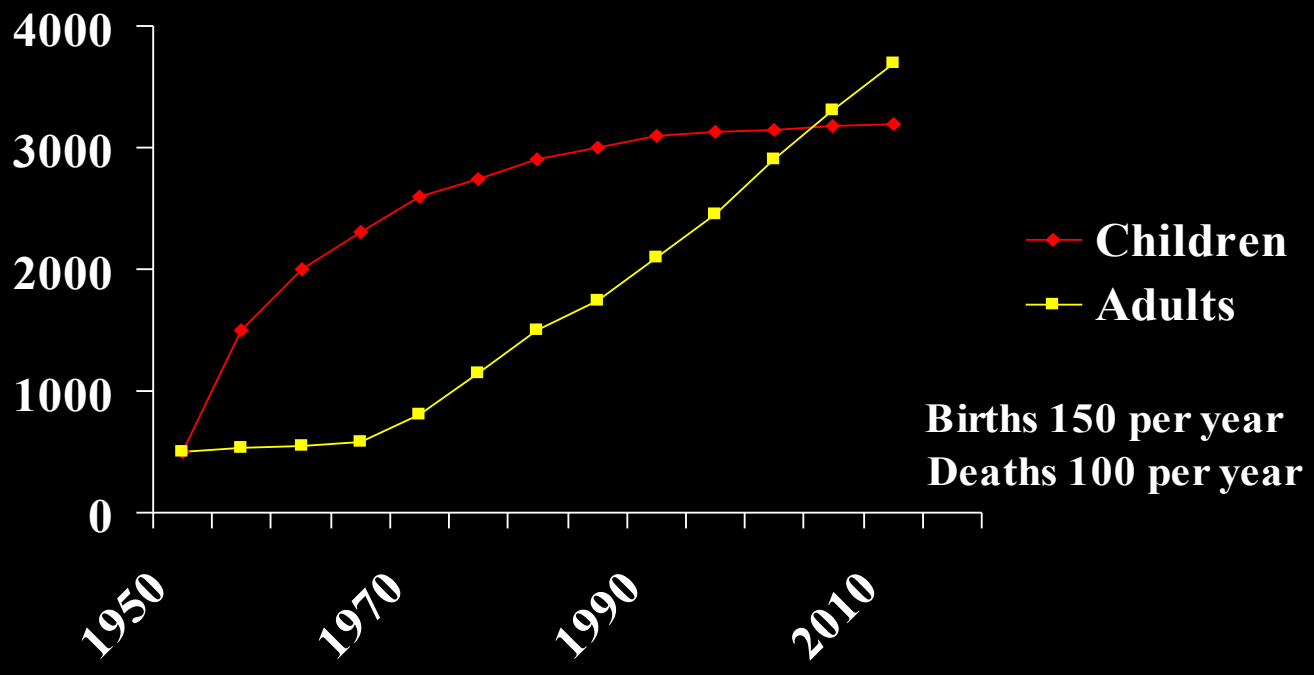


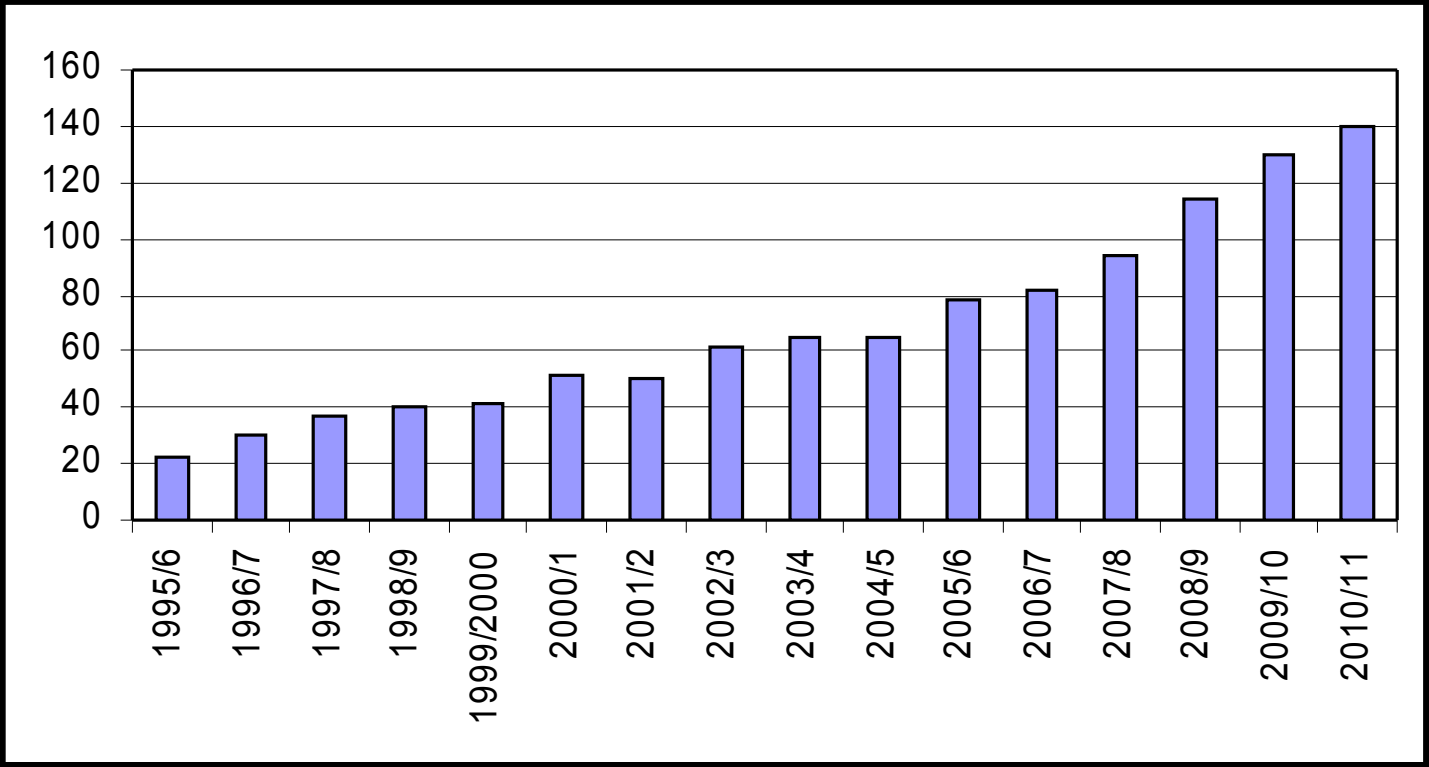

Specialist clinics/services:

- Sleep related breathing disorders including nasal CPAP and non-invasive ventilation
- Cystic fibrosis (only adult centre in Thames Valley SHA)
- Pleural disease including diagnostic thoracoscopy
- Interventional bronchoscopy (endobronchial palliation)
- COPD clinic
- Bronchiectasis clinic
- Sarcoidosis/ILD clinic

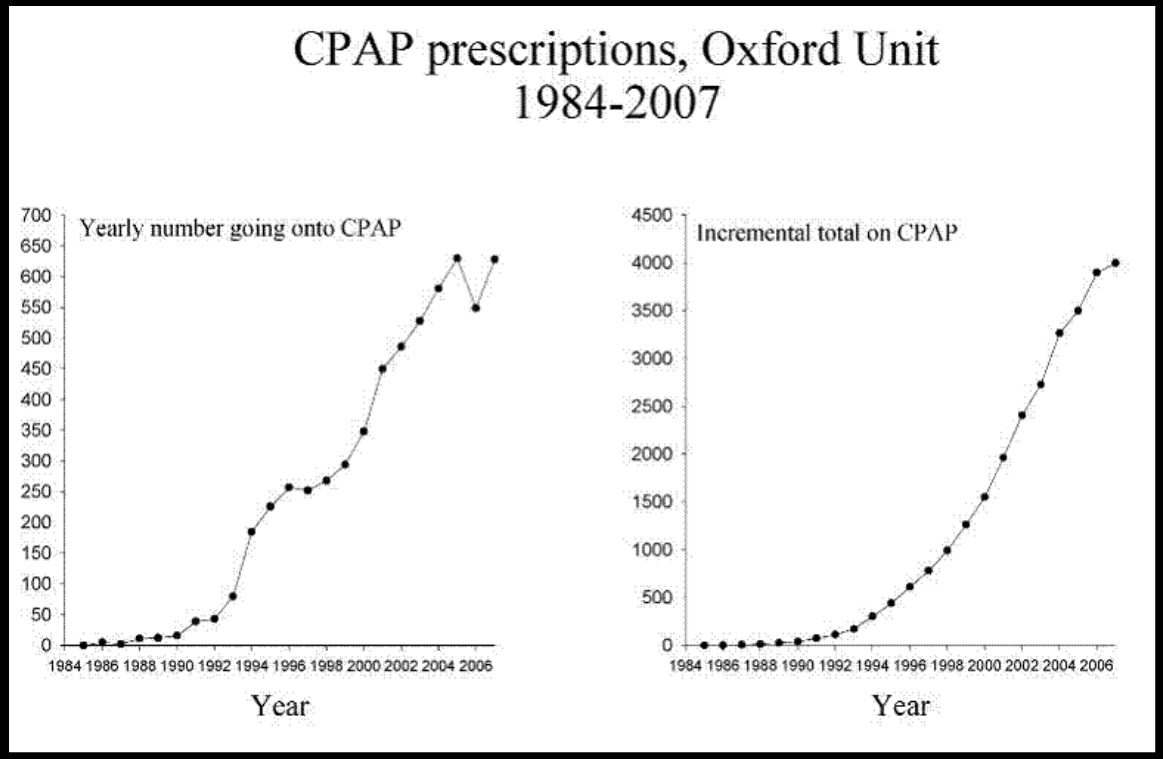
Epidemiology - England & Wales



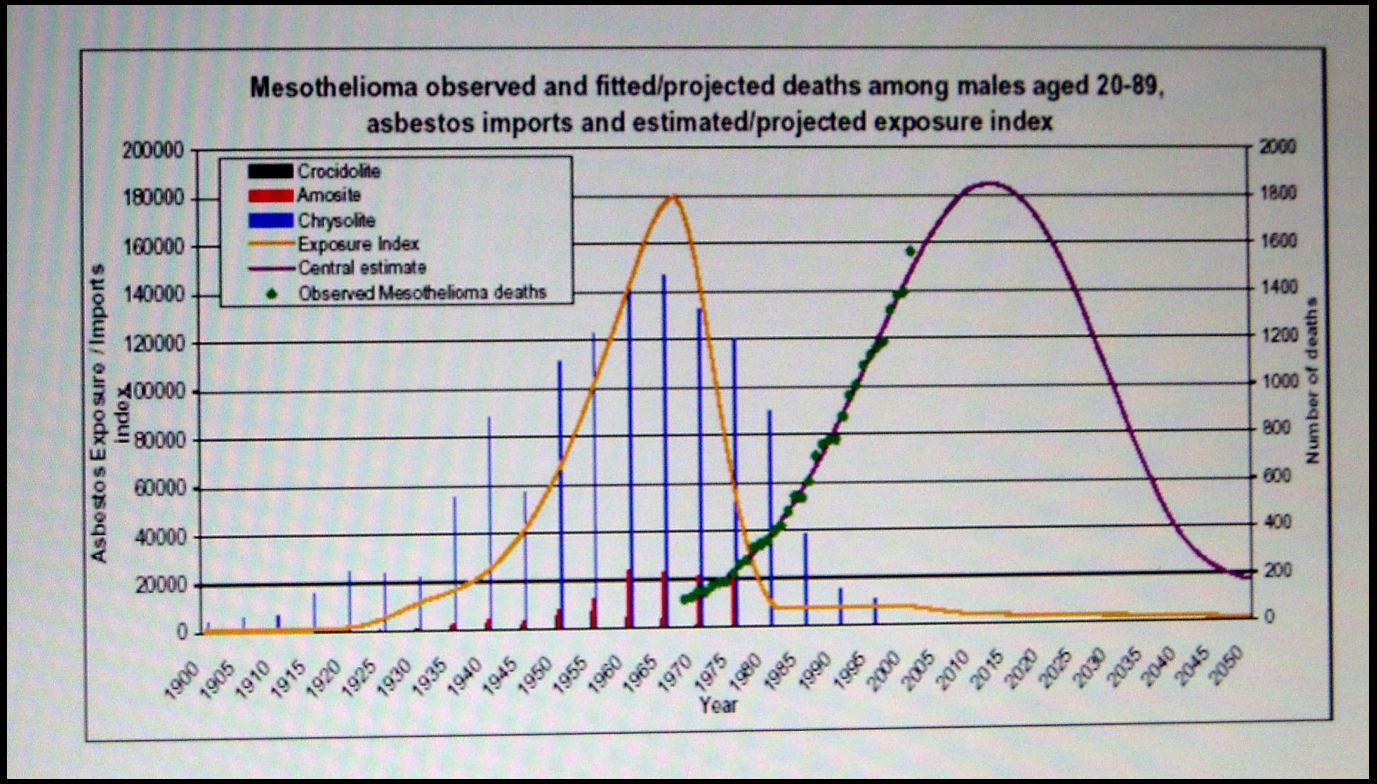
Predicted growth in Oxford adult cystic fibrosis patients



Sleep apnoea

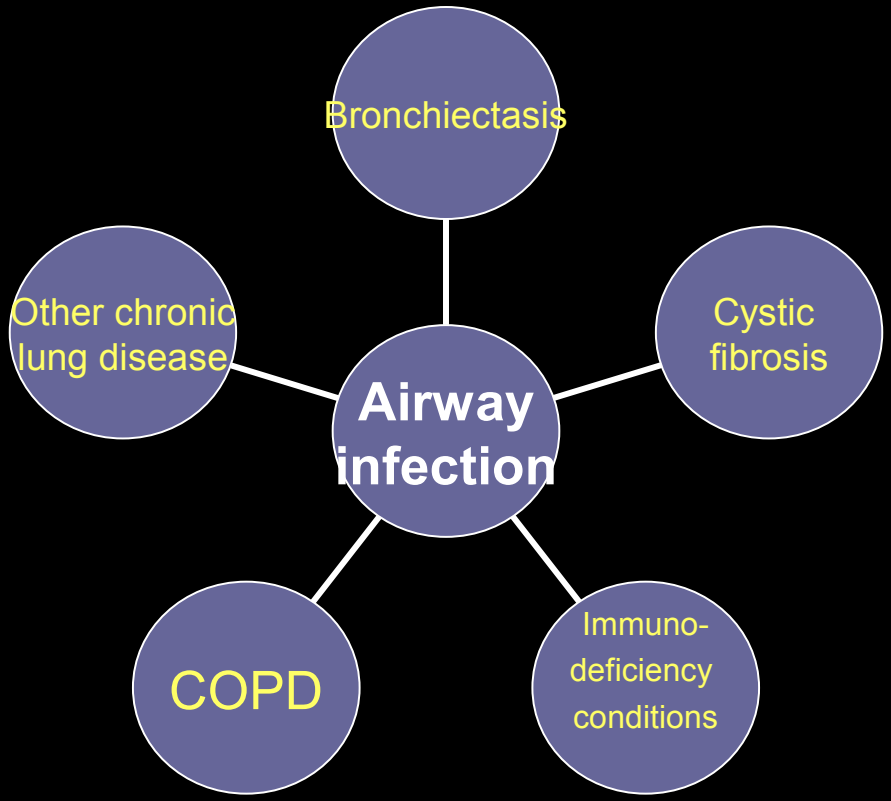


Malignant mesothelioma



Airway infection in chronic lung disease

Associated conditions



Bronchiectasis

- Abnormal and permanent distortion bronchi
- Congenital (CF, immune deficiency, PCD) or acquired (previous pneumonia, TB etc.)
- Adults, mostly ‘idiopathic’

Incidence

- Largely unknown
- Apparent ‘increase’ in incidence probably due to more cases being diagnosed with HRCT
- Bronchiectasis has been identified using HRCT in up to 15%-30% of patients diagnosed in primary care with chronic bronchitis and COPD

Pathophysiology

Infection

↓ ↑

Impairment of host defense/drainage

↓

Inflammatory host response (damage to bronchial wall)

↓

Abnormal bronchial dilatation with bronchial wall destruction

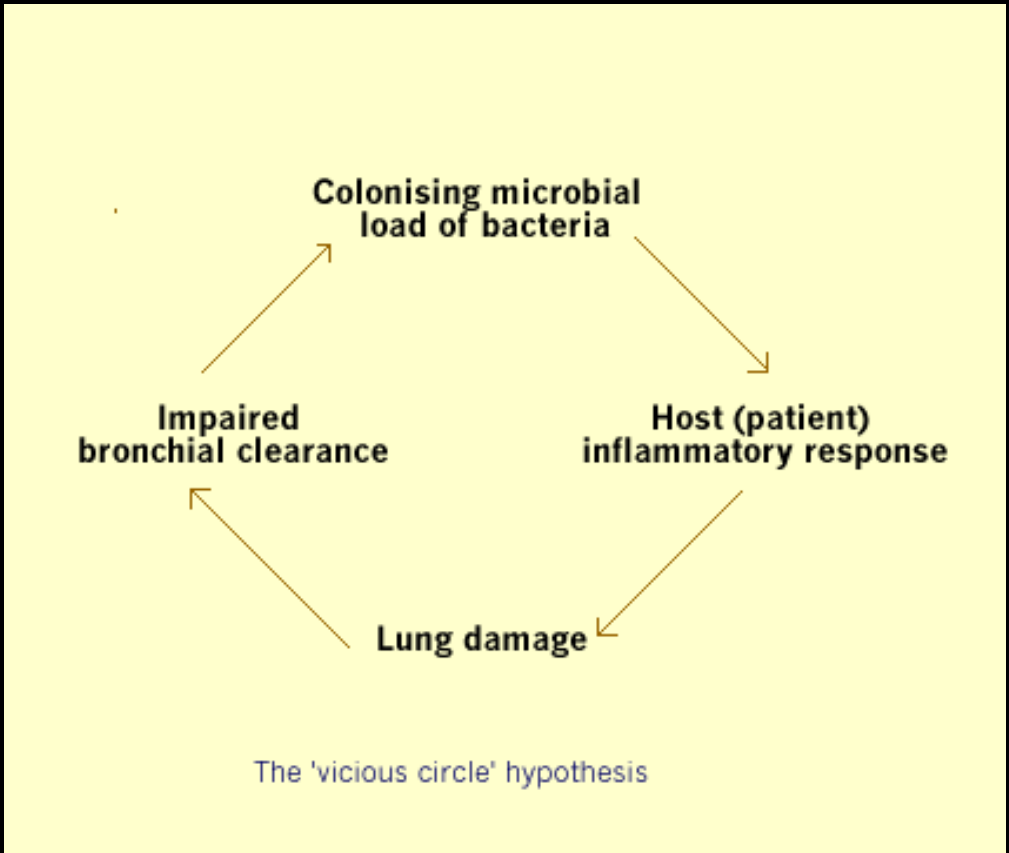
↓

Impairment of clearance of secretions

↓

Colonization and infection with pathogenic organisms,

Vicious cycle of infection/lung damage



The 'vicious circle' hypothesis

Clinical features that might suggest bronchiectasis:

- Cough and daily mucopurulent sputum (75%)
- Dyspnoea (72%)
- Obstructive spirometry without significant smoking history
- History of frequent episodes of ‘bronchitis’
- Pleuritic chest pain (intermittently in 40%). Usually secondary to chronic coughing, occasionally acute exacerbation.
- Other: haemoptysis, weight loss (severe bronchiectasis)

Examination

- Crackles may/may not be helpful
- FEV1/FVC useful, for documenting severity and tracking changes
- Systemic markers of infection often not present

Diagnosis

- Clinical history
- CXR can be normal
- Characteristic findings on CT scans
- Often airflow obstruction on spirometry

Natural History

- Incurable
- Active management reduces symptoms and delays/prevents further lung damage
- Complications include lung abscess, haemoptysis, empyema, pneumothorax
- Currently, mortality is related more to progressive respiratory failure and cor pulmonale than to uncontrolled infection

Outcome

- Few studies on outcome
- Approx 1 in 5 will have premature death (mean age 53 years)

Treatment

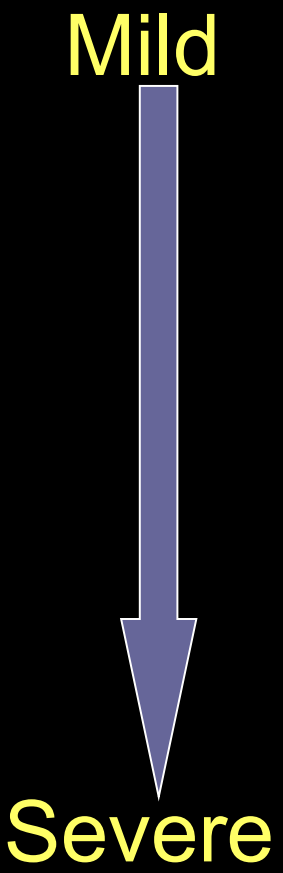
- Disease education/self-management plan
- Regular physiotherapy
- Prompt antibiotics for infection
- Multi-disciplinary clinic
- Telephone advise service

Education

- Patients need to understand risk of progression and ‘vicious circle’
- Agree what is ‘normal symptoms’ and therefore what is acceptable and clarify the aims of treatment

Determine ‘normal symptoms’

- No symptoms
- Recurrent acute bronchitis (infective exacerbations) with no background symptoms
- Recurrent acute bronchitis on a background of daily mucoid sputum
- Daily purulent sputum without systemic/generalized symptoms plus/minus recurrent acute bronchitis
- Daily purulent sputum with systemic/generalized symptoms plus/minus recurrent acute



Agree aims of treatment

	Ideal	Realistic
Background symptoms	Abolition	Minimise
Acute episodes of bronchitis	Prevention	Reduce severity
Disease progression	Prevention	Prevention
Adverse effects	None	Minimise

Disease education

- Be aware of changes in sputum (viscosity, colour, volume)
- Self-management plan
  - Sputum specimen
  - Initiate ‘stand-by’ antibiotics
  - Contact service if no improvement in 3-4 days

Oxford Radcliffe Hospitals NHS
NHS Trust

SELF MANAGEMENT PLAN FOR BRONCHIECTASIS PATIENTS

The doctor and physiotherapists will have talked to you about the importance of prompt treatment for infective exacerbations. It is therefore important to be aware of symptoms of an exacerbation as follows:

- An increase on the volume of your sputum from your normal day-to-day amount
- A change in colour of your sputum
- Feeling more tired and generally not well
- Your chest feeling constricted or congested
- Evidence of soreness or pain in your chest
- Shortness of breath, and wheeze

If you have more than two of the above symptoms, and do not know what to do, please contact the bronchiectasis team on 01865 225713 or 01865741841 asking for bleep 1234 for advice (Monday to Friday, 9:30 to 12:30)

- If possible send a sputum sample to your local GP surgery or by post to the laboratory at the John Radcliffe Hospital, using the correct postal packaging provided by the hospital.
- If the sample has been sent to the John Radcliffe Hospital. Please contact the bronchiectasis team for the result after four days.
- Start your prescribed reserve course of antibiotics.
- If you are not responding to the treatment within three to four days, contact the bronchiectasis team.
- If you are having recurrent infections i.e monthly, please contact the bronchiectasis team to discuss if you need an earlier review.

Antibiotics

- Recommend high doses for at least 2 weeks
- *In vitro* sensitivity not necessarily representative of *in vivo* action
- Treat according to organism from most recent sputum microbiology
- H Influenzae most common in mild/mod disease
- Pseudomonas aeruginosa more common as disease progresses

Which antibiotic?

- Amoxicillin 500mg tds for 2 weeks (clarithromycin 500mg bd)

Second-line

- Co-amoxiclav 625 tds for 2 weeks

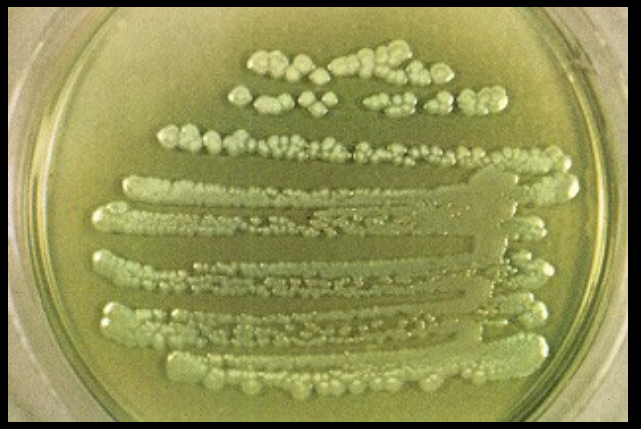
- One that has worked before!

Long-term antibiotics

- Desperate measure!
- In selected patients only
- In response to recent change in symptoms
- Usually rotate every 28 days
- Only use if oral antibiotics work

Pseudomonas aeruginosa

- Chronic infection usually associated with significant decline
- Once established, difficult to clear
- Treatment of exacerbations much more complicated
- Aggressive management of PsA infection, 5 year survival increased from 54% to 82% in CF



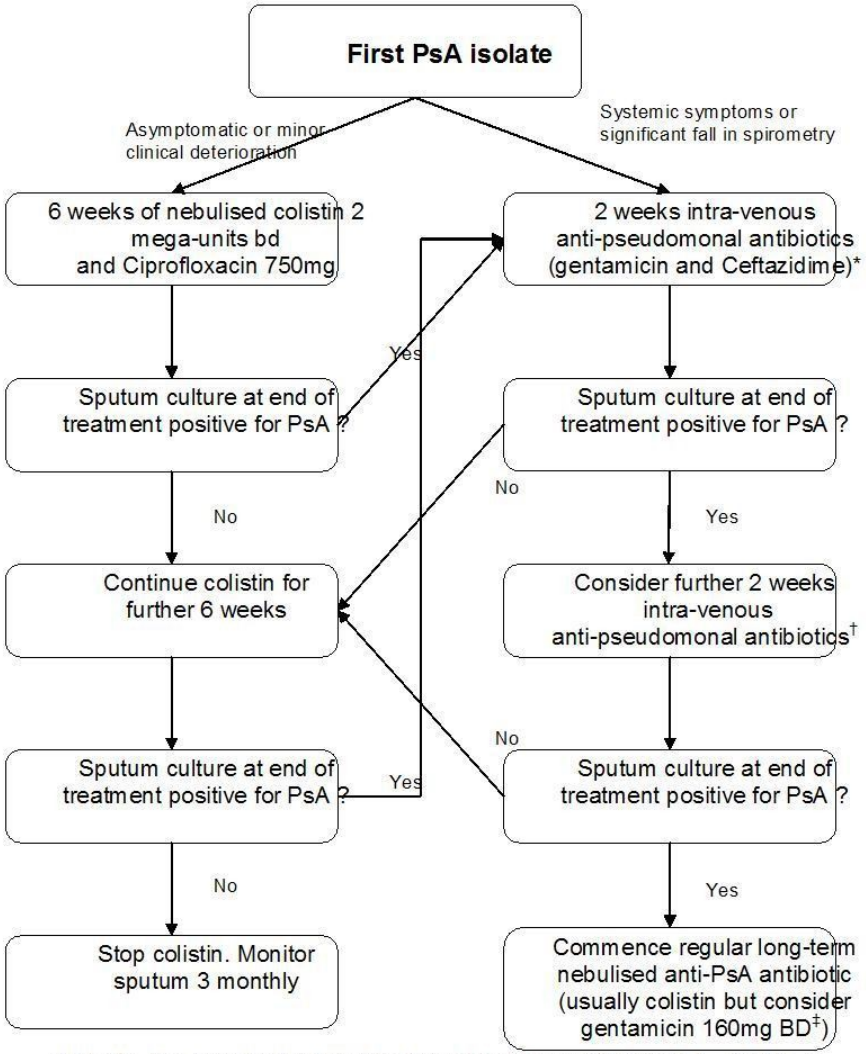
Pseudomonas aeruginosa – first isolate

- Colistin nebulised 2 mega-units bd
- Ciprofloxacin 750mg
- 6 weeks

- *Valerius et al* (1991)

- If still colonised at 6 weeks
- Check compliance with colistin
- Consider 2 weeks intra-venous anti-pseudomonal antibiotics

Protocol for treatment of first isolate of Pseudomonas non-CF bronchiectasis



* Needs review at one week to ensure clinical improvement e.g. change in sputum volume, colour etc

† Decision for a further course is based on clinical judgment but particularly if lung function has fallen and CRP is still up

‡ The data for gentamicin is less robust than for colistin. Use in less severe cases and monitor progress. In the first 6 months if spirometry falls or requires an additional course of iv antibiotics, switch to nebulised colisitin

Chronic infection with PsA

- Usually require iv antibiotics for exacerbations
- Some patients suitable for self-administration of home iv antibiotics
- Long term nebulised antibiotics reduce frequency of exacerbations

Physiotherapy

- Aims are to reduce airway obstruction by improving the clearance of secretions
- To reduce the severity of the infection by clearing infected material
- Variety of techniques according to technique/disease severity
- Exercise

Physiotherapy

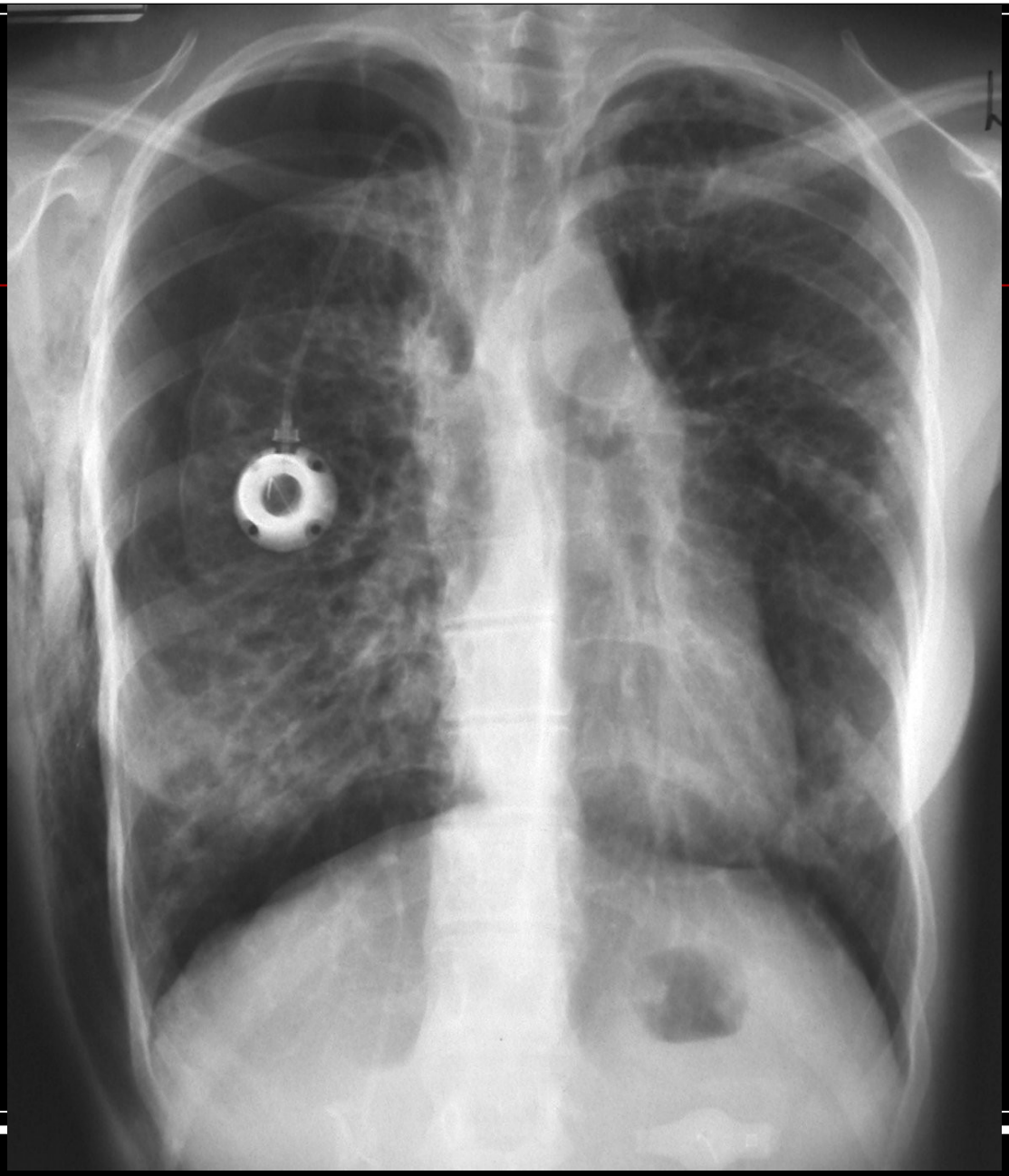
- Active methods preferred
- E.g. ACBT, AD
- Postural drainage and percussion used much less in adults

Flutter device

Other treatments

- Immunisation
- No role for inhaled steroids (unless co-existing asthma)
- Consider bronchodilators
- Anti-inflammatory drugs – no role
- Nebulised antibiotics (usually for Pseudomonas)
- Surgery – very rarely appropriate
- Transplant

Total implantable venous access devices (portacath)



Case

54 year old woman

Recurrent episodes of bronchitis

Now some breathlessness

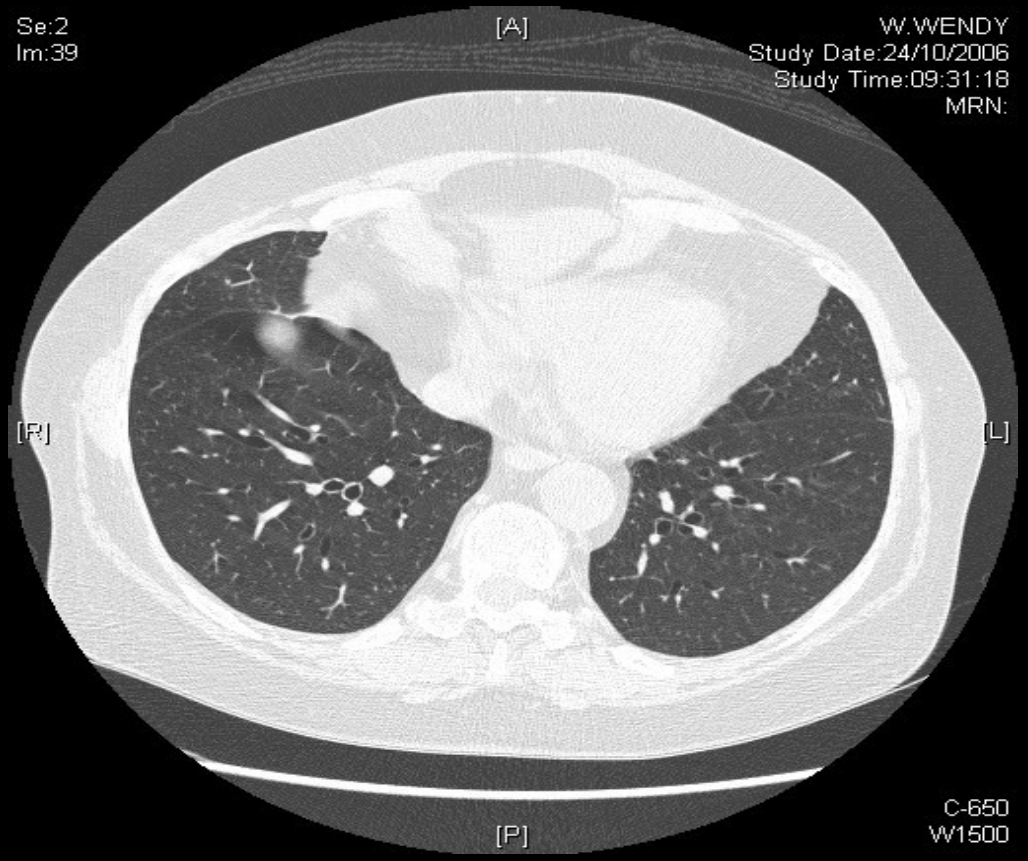
Smoked until age 30, stopped ‘smokers cough’

Childhood whooping cough

Investigations

- CXR Normal
- Spirometry
  - FEV1: 1.8 (predicted 2.4)
  - FVC : 2.8 (predicted 2.9)
  - FEV1/FVC = 64%
- Sputum MC and S – H Influenzae
- HRCT thorax

HRCT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[A]
W.WENDY
Study Date:24/10/2006
Study Time:09:31:18
MRN:
[R]
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C-650
W1500

Investigations

- Immunoglobulins – Low IgG
- Aspergillus RAST

Common Variable Immunodeficiency

Other tests only if clinical suspicion (CF genotype/sweat test/ciliary studies)

Bronchiectasis service

- Patient telephone support service
  - contact point for the bronchiectasis patients/GPs.
  - Medical assessment can be arranged for those who need it.

- Annual review appointment (Instead of 3-4 monthly review)
  - For stable patients who have self-management plan
  - Disease education
  - Microbiological surveillance
  - Monitoring disease progression

- Home intravenous antibiotics
  - Commenced in hospital (but 2-3 day stay rather than 14 day).

Service Search

Referral Information

Initial Referring Clinician - Clark, Ben Kenneth

Referring PCT - CHERWELL VALE PCT

Practice - GP SPECIALIST INTEREST SERVICE

*Priority: Routine

Due By Date: / /

Request Advice

Define Additional Requirements

Filter Services By:

Specialty: Thoracic Medicine

Access Service Selection

*Clinic Type: General Thoracic Medicine

Named Clinician:

Keyword:

Search Extended Choice Network

View Additional Filter Options

Suggest Services

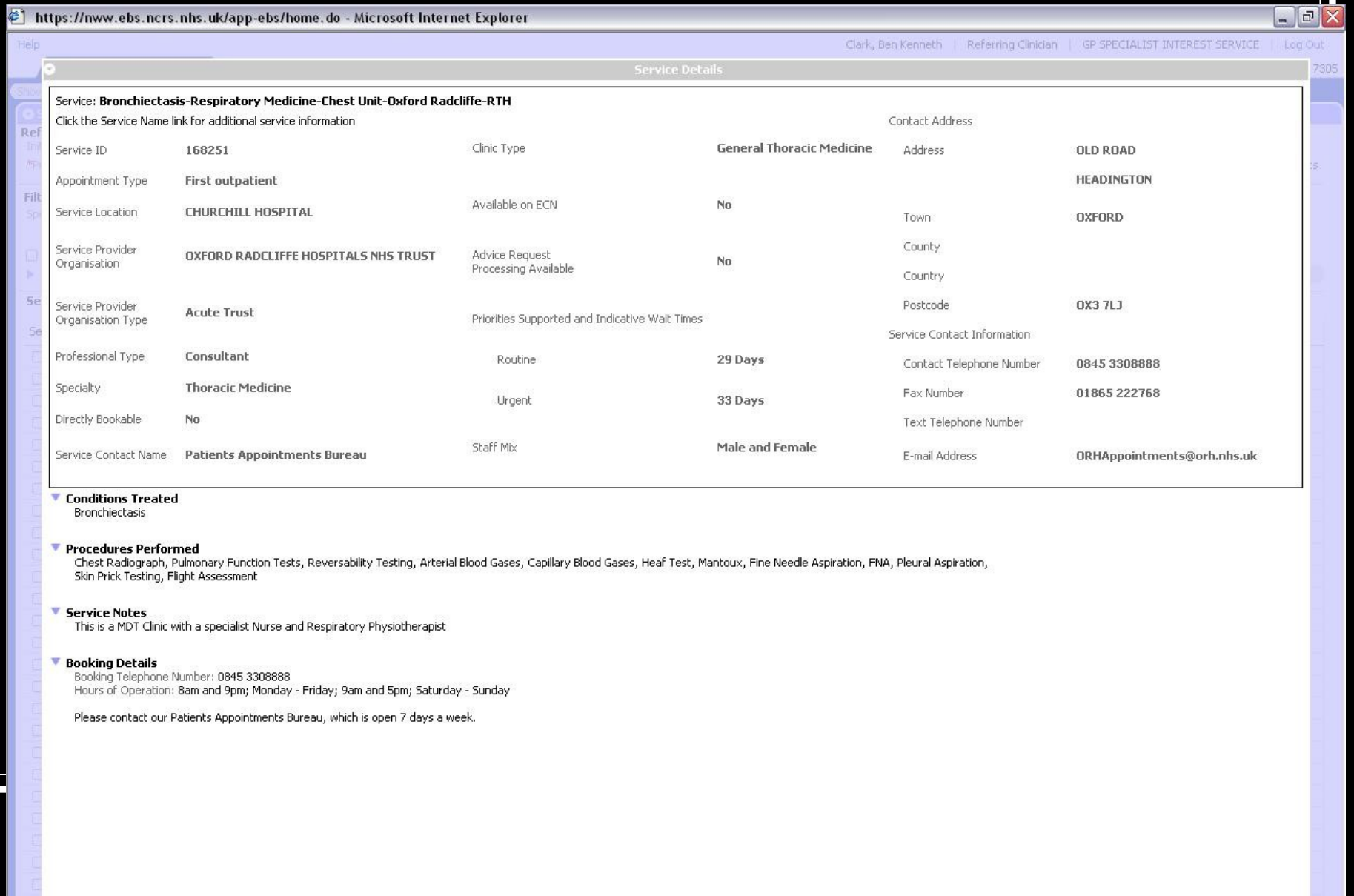
Service Results

Group By: None

Select	Miles	Service Name	Directly Bookable	Location	Patient Information	Appointment Type	Indicative Wait Time	Organisation Type
☐	5	Bronchiectasis-Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	29 Days	NHS Trust
☐	5	COPD-Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	37 Days	NHS Trust
☐	5	Pleural-Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	47 Days	NHS Trust
☐	5	Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	47 Days	NHS Trust
☐	5	Sarcoidosis-Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	44 Days	NHS Trust
☐	5	Thoracic Oncology-Respiratory Medicine-Oxford Radcliffe-RTH	N	CHURCHILL HOSPITAL	nhs.uk	First outpatient	Unknown	NHS Trust
☐	20	'Respiratory General, All Clinics-West Berks Community Hospital-RHW	N	WEST BERKSHIRE COMMUNITY HOSPITAL	nhs.uk	First outpatient	30 Days	NHS Trust
☐	21	Respiratory General Medicine-Thoracic Medicine -Swindon & Marlborough NHST-RN3	Y	THE GREAT WESTERN HOSPITAL	nhs.uk	First outpatient	15 Days	NHS Trust
☐	23	'Respiratory General, All Clinics-Royal Berks Hospital-RHW	N	ROYAL BERKSHIRE HOSPITAL	nhs.uk	First outpatient	19 Days	NHS Trust
☐	33	General-Thoracic Medicine-MKGH-RD8 BHA	N	MILTON KEYNES GENERAL HOSPITAL	nhs.uk	First outpatient	40 Days	NHS Trust
☐	33	General-Thoracic/Respiratory Medicine-MKGH-RD8 MUK	N	MILTON KEYNES GENERAL HOSPITAL	nhs.uk	First outpatient	36 Days	NHS Trust
☐	33	Oxygen Therapy Assessment Service-Thoracic Medicine-MKGH-RD8	N	MILTON KEYNES GENERAL HOSPITAL	nhs.uk	First outpatient	33 Days	NHS Trust
☐	42	COPD (Nurse led)-Thoracic Medicine-Warwick Hospital-RJC	N	WARWICK HOSPITAL	nhs.uk	First outpatient	56 Days	NHS Trust
☐	42	Thoracic Medicine-Thoracic Medicine-Warwick Hospital-RJC	N	WARWICK HOSPITAL	nhs.uk	First outpatient	48 Days	NHS Trust
☐	47	Sarcoid and Diffuse Lung Disease-Thoracic Medicine-Hammersmith Hospitals Trust-RQN02	Y	HAMMERSMITH HOSPITAL	nhs.uk	First outpatient	Unknown	NHS Trust
☐	47	Thoracic Medicine-Thoracic Medicine-Hammersmith Hospitals Trust-RQN02	Y	HAMMERSMITH HOSPITAL	nhs.uk	First outpatient	28 Days	NHS Trust
☐	49	Sarcoid and Diffuse Lung Disease-Thoracic Medicine-Hammersmith Hospitals Trust-RQN01	Y	CHARING CROSS HOSPITAL	nhs.uk	First outpatient	24 Days	NHS Trust
☐	49	Thoracic Medicine-Thoracic Medicine-Hammersmith Hospitals Trust-RQN01	Y	CHARING CROSS HOSPITAL	nhs.uk	First outpatient	Unknown	NHS Trust
☐	50	General Respiratory & Lung Neoplasia_Thoracic Medicine_Royal Free Hospital_RAL	Y	ROYAL FREE HOSPITAL	nhs.uk	First outpatient	31 Days	NHS Trust
☐	50	General Respiratory & Respiratory Infection_Thoracic Medicine_Royal Free Hospital_RAL	Y	ROYAL FREE HOSPITAL	nhs.uk	First outpatient	Unknown	NHS Trust
☐	50	General Respiratory, Asthma & COPD_Thoracic Medicine_Royal Free Hospital_RAL	Y	ROYAL FREE HOSPITAL	nhs.uk	First outpatient	8 Days	NHS Trust
☐	50	General Respiratory, COPD & Ventilatory Support_Thoracic Medicine_Royal Free Hospital_RAL	Y	ROYAL FREE HOSPITAL	nhs.uk	First outpatient	21 Days	NHS Trust
☐	51	General Chest Service - Thoracic Medicine Dept - UCLH - RRV	Y	UNIVERSITY COLLEGE HOSPITAL	nhs.uk	First outpatient	44 Days	NHS Trust
☐	51	Interstitial Lung Disease Service - Thoracic Medicine Dept - ULCH - RRV	Y	UNIVERSITY COLLEGE HOSPITAL	nhs.uk	First outpatient	9 Days	NHS Trust
☐	51	Lung Infection Service - Thoracic Dept - UCLH - RRV	Y	UNIVERSITY COLLEGE HOSPITAL	nhs.uk	First outpatient	9 Days	NHS Trust
☐	69	Thoracic Medicine (General)-Addenbrooke's-CUHNFT-RGT	Y	ADDENBROOKE'S HOSPITAL	nhs.uk	First outpatient	30 Days	NHS Trust

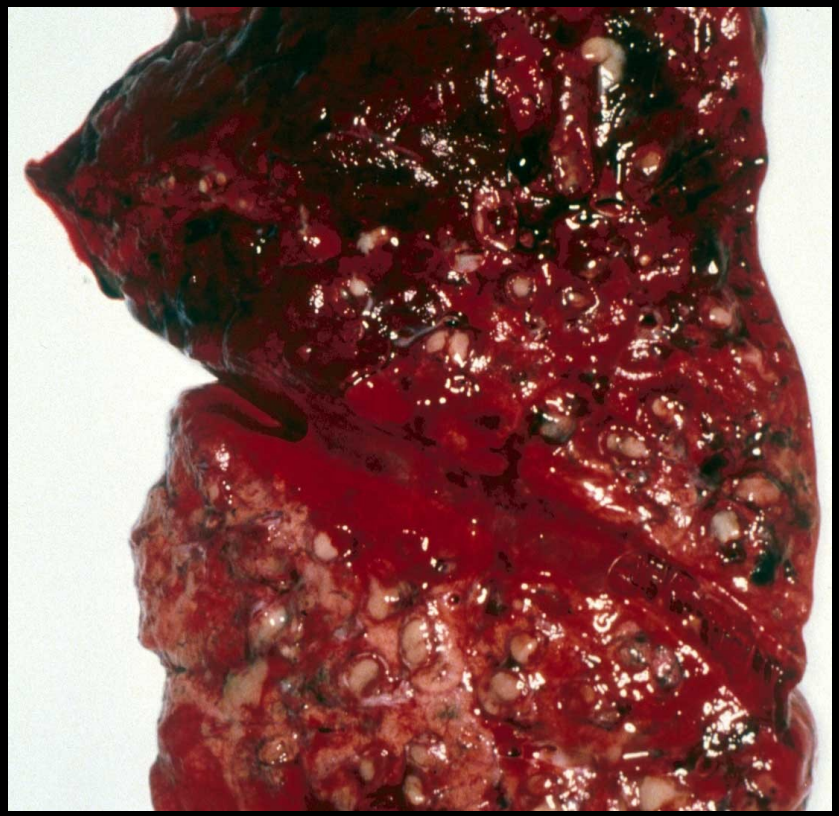
Compare Services

Cancel | Appointment Search | Request


https://nww.ebs.ncrs.nhs.uk/app-ebs/home.do - Microsoft Internet Explorer
Help
Clark, Ben Kenneth | Referring Clinician | GP SPECIALIST INTEREST SERVICE | Log Out
Service Details
Service: Bronchiectasis-Respiratory Medicine-Chest Unit-Oxford Radcliffe-RTH
Click the Service Name link for additional service information
Service ID 168251
Appointment Type First outpatient
Service Location CHURCHILL HOSPITAL
Service Provider Organisation OXFORD RADCLIFFE HOSPITALS NHS TRUST
Service Provider Organisation Type Acute Trust
Professional Type Consultant
Specialty Thoracic Medicine
Directly Bookable No
Service Contact Name Patients Appointments Bureau
Clinic Type General Thoracic Medicine
Available on ECN No
Advice Request Processing Available No
Priorities Supported and Indicative Wait Times
Routine 29 Days
Urgent 33 Days
Staff Mix Male and Female
Contact Address
Address OLD ROAD
HEADINGTON
Town OXFORD
County
Country
Postcode OX3 7LJ
Service Contact Information
Contact Telephone Number 0845 3308888
Fax Number 01865 222768
Text Telephone Number
E-mail Address ORHAppointments@orh.nhs.uk
Conditions Treated
Bronchiectasis
Procedures Performed
Chest Radiograph, Pulmonary Function Tests, Reversability Testing, Arterial Blood Gases, Capillary Blood Gases, Heaf Test, Mantoux, Fine Needle Aspiration, FNA, Pleural Aspiration, Skin Prick Testing, Flight Assessment
Service Notes
This is a MDT Clinic with a specialist Nurse and Respiratory Physiotherapist
Booking Details
Booking Telephone Number: 0845 3308888
Hours of Operation: 8am and 9pm; Monday - Friday; 9am and 5pm; Saturday - Sunday
Please contact our Patients Appointments Bureau, which is open 7 days a week.

?

Cystic Fibrosis – an adult disease



Cystic Fibrosis (CF) is the UK's most common, life-threatening, inherited disease

Cystic Fibrosis affects over 7,500 people in the UK

Failure of CFTR leads to the main clinical problems in CF due to increased viscosity of mucus in lungs and pancreas

Cystic fibrosis survival

- Dramatically improved survival in last 30 years due to:
  - maximising nutrition using enzymes, supplements and enteral feeding
  - Aggressive management of pulmonary disease
  - Lung transplant
- Average life expectancy is 31 years

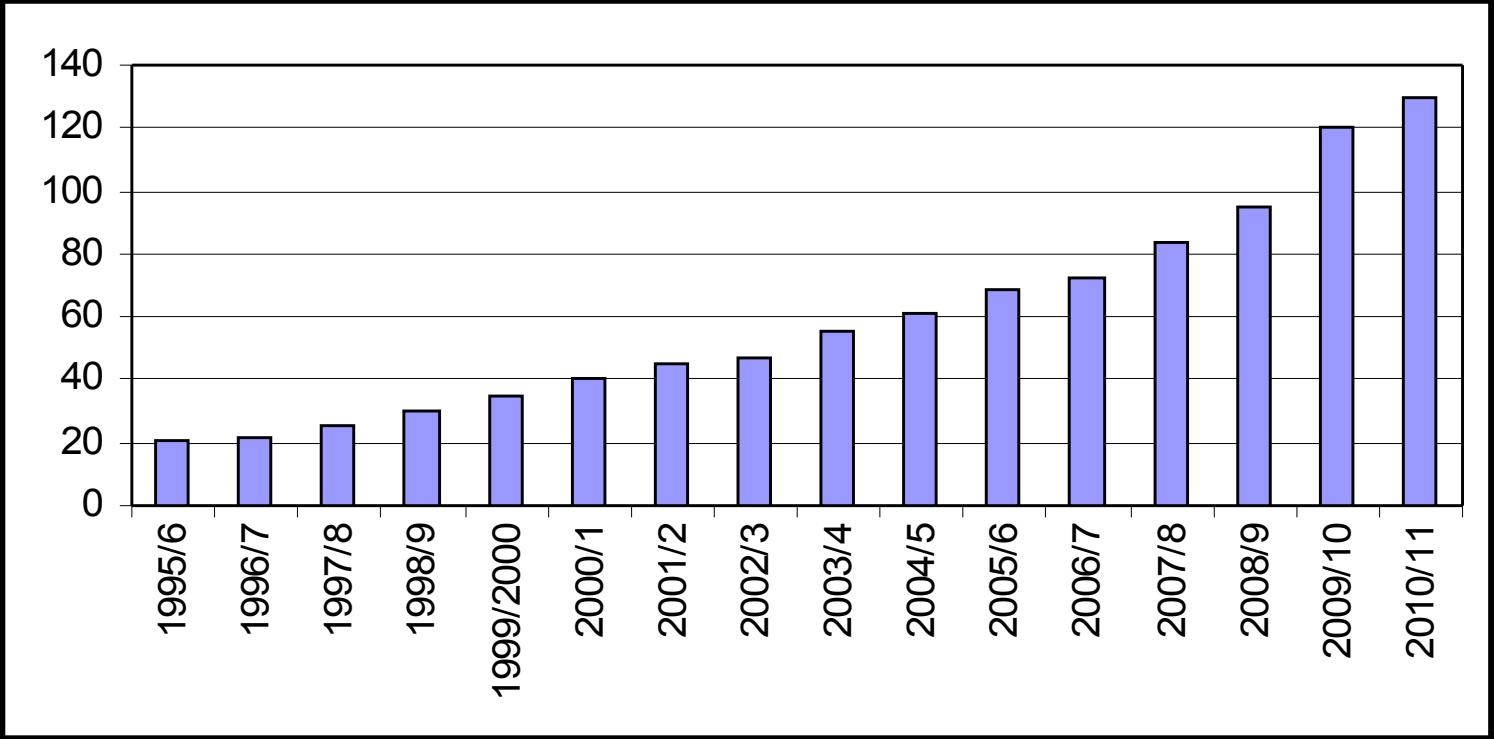
Changing epidemiology

Percentage of CF patients surviving to age 5

Year born	Males	Females
1968-70	75%	73%
1977-79	88%	87%
1989-1991	97%	97%

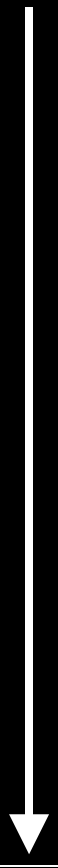
- More patients are surviving to adulthood
- 50% of CF patients are now 16 or over and 30% are over 20

Predicted growth



Treatment – Lung disease

- Daily physiotherapy
- Frequent antibiotics
- Intra-venous antibiotics
- Inhalers
- Daily nebulised antibiotics
- Oxygen
- Non-invasive ventilation
- Lung transplant



DISEASE PROGRESSION

Other treatment

- Daily enzymes
- Nutritional supplements/NG or PEG feeding
- Vitamin supplements
- Insulin

Other complications

- Cystic Fibrosis Related Diabetes mellitus
- Bowel Obstruction
- Gastro-oesophageal reflux
- Pancreatitis
- Liver and biliary disease
- Osteoporosis
- Nasal polyps and sinusitis
- Arthropathy, arthritis and vasculitis
- Infertility
- Pneumothorax
- Haemoptysis

Tertiary service

- Multi-disciplinary specialist team
  - 2 consultants
  - 2 physiotherapists
  - 3 CF specialist nurses
  - Dietician
  - Pharmacist
  - Psychologist

- Open access to service
- Liaison with other services:
  - Joint diabetic and hepatology clinics
  - Insertion of Intra-vascular devices
  - ENT
  - Interventional Radiologist
  - Oxford Fertility Unit
  - Silver Star Service
  - GI Surgeons

Disease progression

- Deterioration with increasing age
  - Increasing disability
  - Frequent hospital admissions/attendances
  - Respiratory failure
  - Diabetes
- Expensive to treat
  - Banding system

‘Banding’ of CF costs

Band		2006/07
I	Predominantly out-patient treatment	£2313
II	Intravenous antibiotics 3-4 times a year	£9663
III	Intravenous antibiotics 3-4 times a year, some as in-patient	£29666
IV	Severe disease. Intravenous antibiotics 3-4 times a year predominantly as in-patient. Gastrostomy. Diabetes.	£63245
V	Frequent hospital admission. On non-invasive ventilation. Transplant assessment	£99632

Predicted Costs

Year	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011
Band					
I	£60138	£67704	£85884	£102960	£115878
II	£347868	£393822	£485392	£595458	£668334
III	£355992	£403013	£518336	£609372	£707540
IV	£189735	£198273	£207195	£288692	£301684
V	£498160	£624696	£761607	£909576	£950504
T	£498160	£624696	£761607	£909576	£950504
Total	**£1,950,053**	**£2,312,204**	**£2,820,021**	**£3,415,634**	**£3,694,444**


PA